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November 19, 2004

ELECTRONIC FILING

Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
The Portals, 445 12th Street, S.W.
Washington, D.C. 20554

Re: IB Docket No. 00-248
Ex Parte

Dear Ms. Dortch:

On November 18, 2004, the following persons met with International Bureau representatives Thomas Tycz, Karl Kensinger, Robert Nelson, Steven Spaeth, Scott Kotler, and Kathryn Medley: the undersigned, representing PanAmSat Corporation ("PanAmSat"); and Kalpak Gude, Jose Albuquerque, Harry Ng, and Hazem Moakkit of PanAmSat.

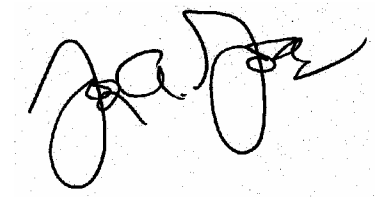
The purpose of the meeting was to discuss an adjacent satellite interference issue. Because the discussions touched on issues that are relevant to the above-referenced proceeding, PanAmSat is making this *ex parte* filing.

The points covered in the meeting are reflected in the enclosed summary. PanAmSat has redacted from the summary certain information, including information concerning which satellites and orbital locations are involved in the adjacent satellite interference issue, that is not relevant to the above-referenced proceeding.

Ms. Marlene H. Dortch
November 19, 2004
Page 2

Please direct any questions concerning this filing to the undersigned.

Sincerely,

A handwritten signature in black ink, appearing to read "Joe Godles", with a stylized flourish at the end.

Joseph A. Godles
Attorney for PanAmSat Corporation

Attachment

Cc: Thomas Tycz
Karl Kensinger
Robert Nelson
Steven Spaeth
Scott Kotler
Kathryn Medley



Interference Generated by Non-Compliant Earth Station Antennas

○○○○○ MOVING AHEAD

Thursday, November 18, 2004

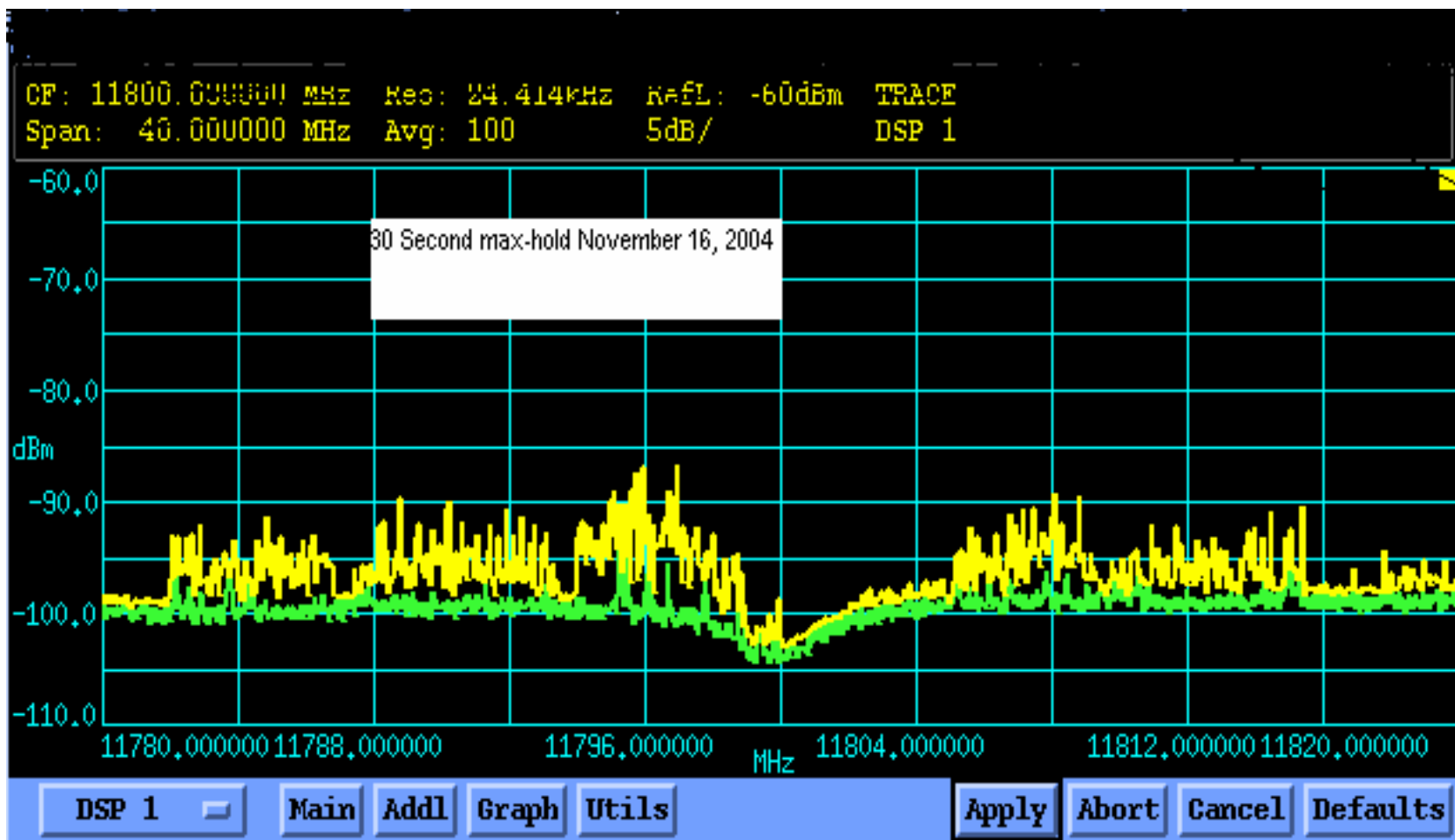
Interference from [satellite name and orbital location] to [satellite name and orbital location]

MOVING AHEAD

- [Introductory paragraphs have been removed]
- It has been determined that interference is being generated by non-compliant earth stations that are not properly pointed and as a result are radiating towards [satellite name] with an e.i.r.p. higher than the coordinated level
- Given the practical difficulties associated with the repointing of a large number of antennas at customers' premises, elimination of the problem has been a very slow process

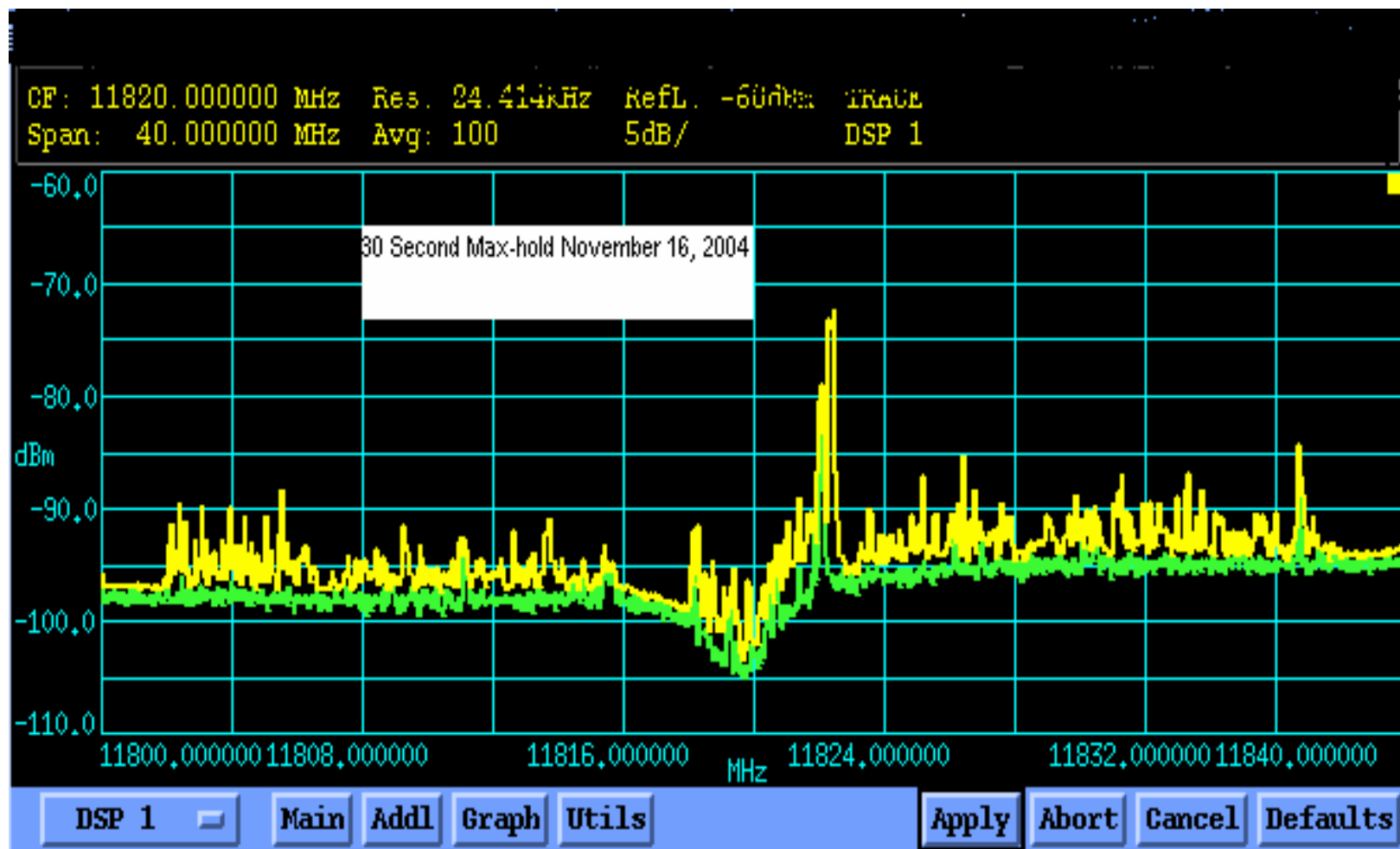
[Name of Satellite and Transponder Numbers]

MOVING AHEAD



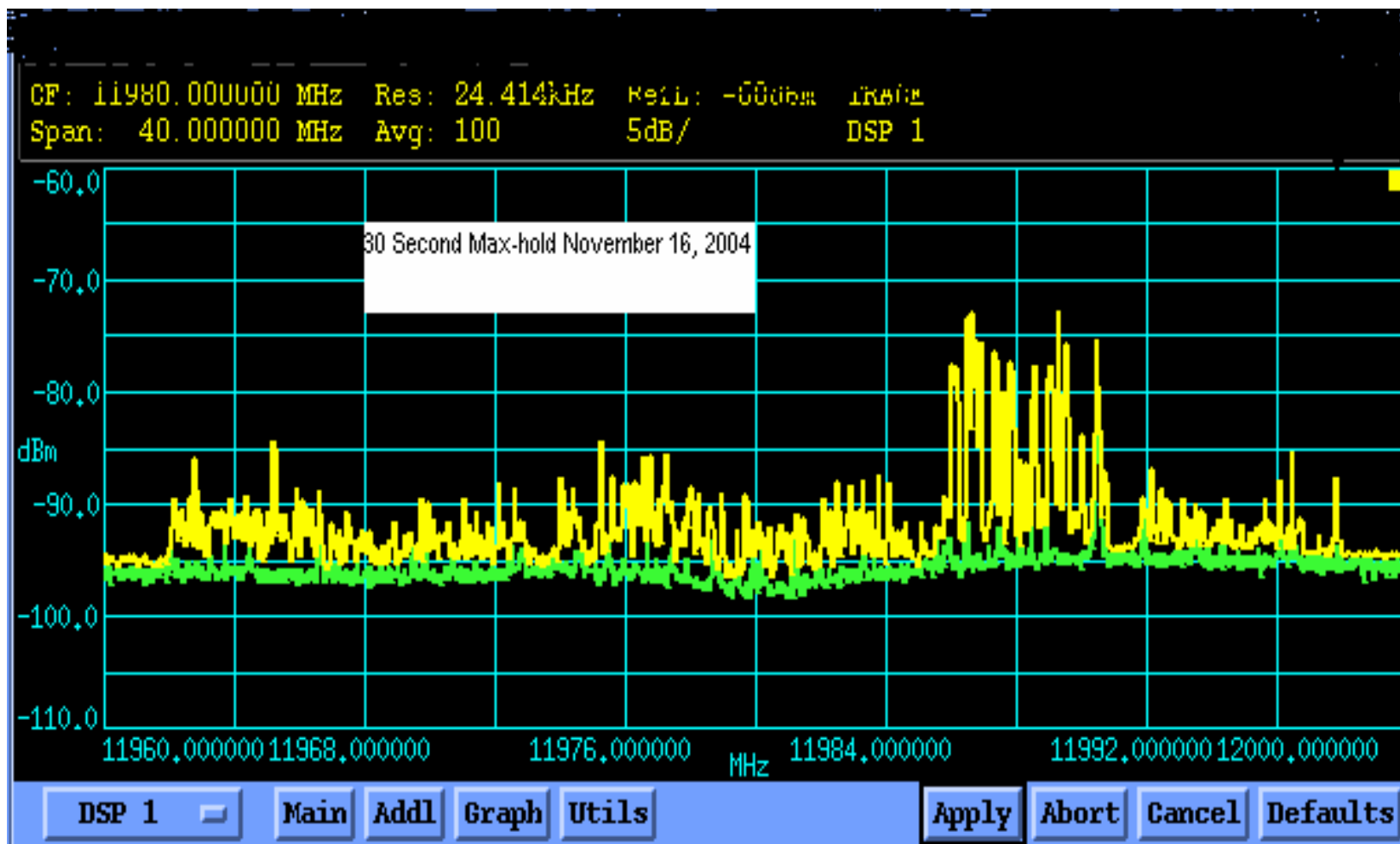
[Name of Satellite and Transponder Numbers]

MOVING AHEAD



[Name of Satellite and Transponder Numbers]

MOVING AHEAD



Off-Axis e.i.r.p. Density Towards [satellite name] Is in Violation of Existing Coordination Agreement

○○○○○ MOVING AHEAD

- For an antenna input power of -14 dBW/4kHz, see §25.143(b), and off-axis antenna pattern compliant with §25.209(a), the off-axis e.i.r.p. density is
$$-14 - 10\log(4 \cdot 10^3) + 29 - 25 \log(2.1) = -29.1 \text{ dBW/Hz}$$
- Accordingly, the coordination agreement signed between [the operators] in [date] requires that earth stations meet the sidelobe pattern in §25.209(a) for off-axis angles greater than or equal to 1.25°
 - However, transmit antennas that do not meet the pattern in §25.209(a) for angles greater than 1.25° and that were licensed before [date] are permitted under the coordination agreement provided the maximum e.i.r.p. density towards [satellite name] does not exceed -29.1 dBW/Hz and the pattern in §25.209(a) is met for angles greater than 1.8°
- Measurements conducted by PanAmSat show that current transmissions are in violation of existing coordination agreement

Ensuring the Required Pointing Accuracy of These Small Earth Station Antennas is Not an Easy Task

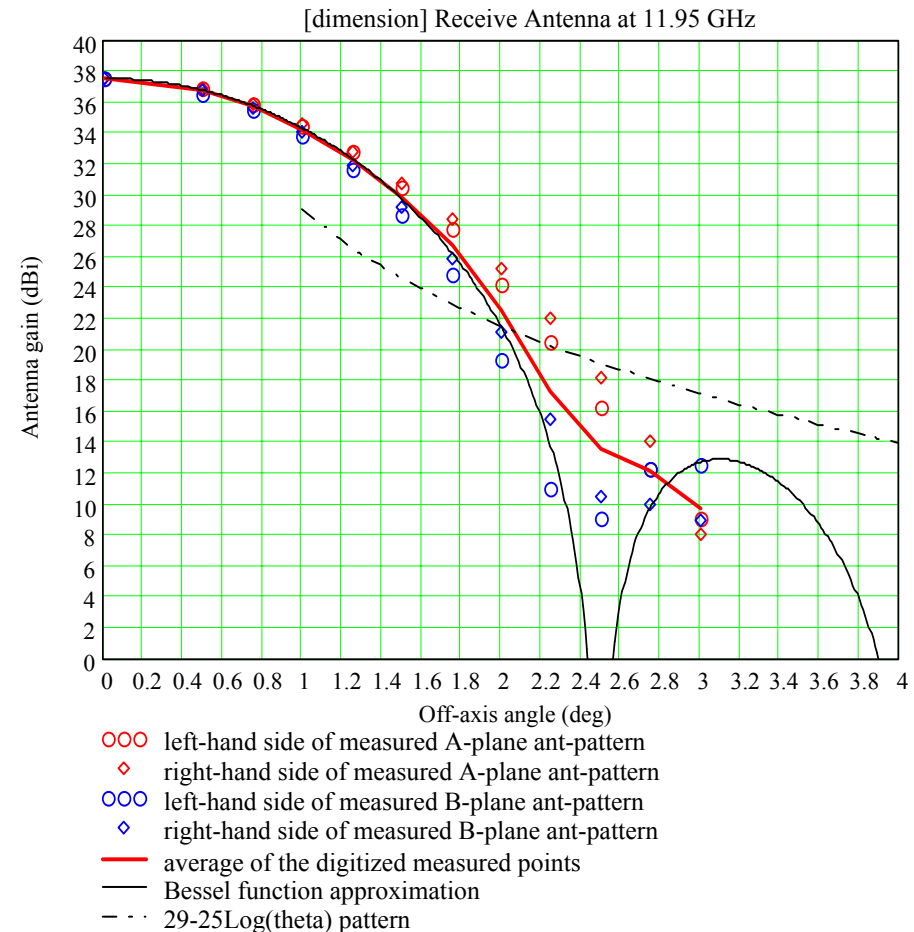
MOVING AHEAD

- It is imperative, therefore, that small earth station antennas be installed and pointed properly at the outset to ensure the agreed off-axis e.i.r.p. levels
- The interference event described here highlights the fact that, after a large number of antennas have been deployed without proper pointing, correction of the problem cannot be done in a timely fashion

Consideration of the Specific Earth Station Antenna Causing Interference to [satellite name]

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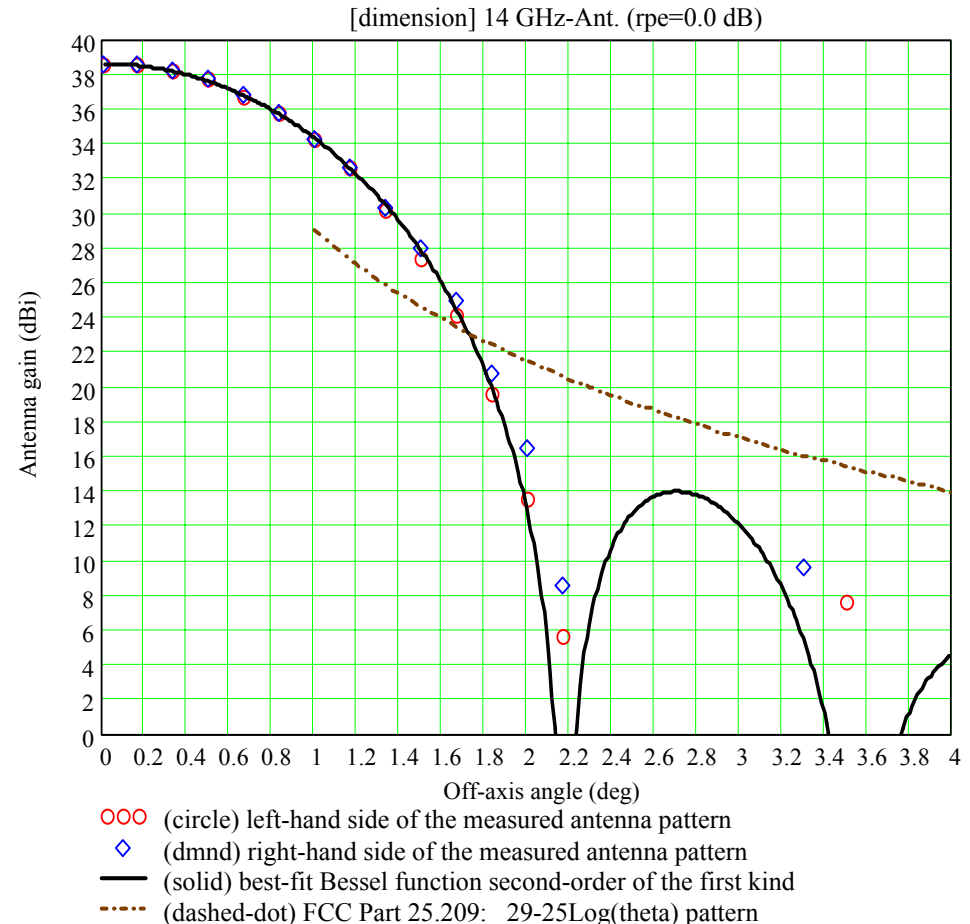
- **Antenna Characteristics**
 - Antenna size: [dimensions]
 - Rx gain: 37.4 dBi, Tx gain: 38.8 dBi
- **If pointing is based on the received signal**
 - 0.5 dB mispoint corresponds to 0.4 degrees
 - 1.0 dB mispoint corresponds to 0.56 degrees
 - 1.5 dB mispoint corresponds to 0.68 degrees



Effects of Mispointing to the Off-Axis Transmit Gain

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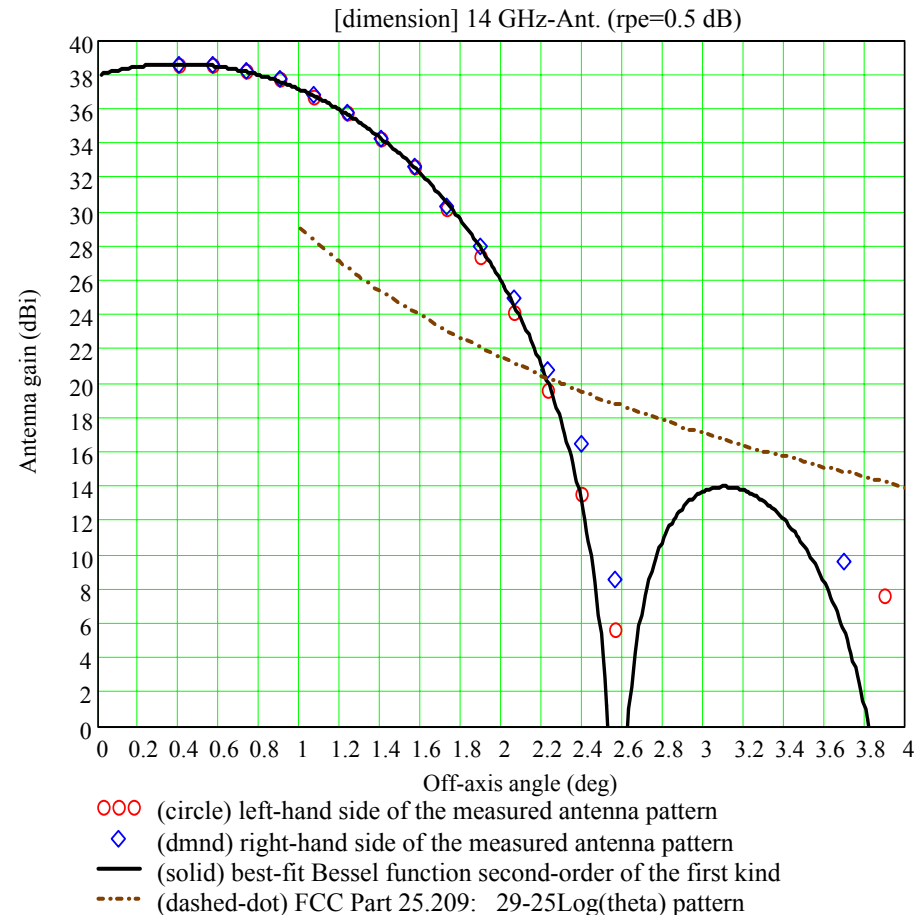
- The transmit pattern of this antenna meets the “ $29-25\log\theta$ ” envelope for $\theta \geq 1.7^\circ$
- On average, 2° orbital separation corresponds to 2.1° topocentric angle



Effect of 0.5 dB (0.4°) Error

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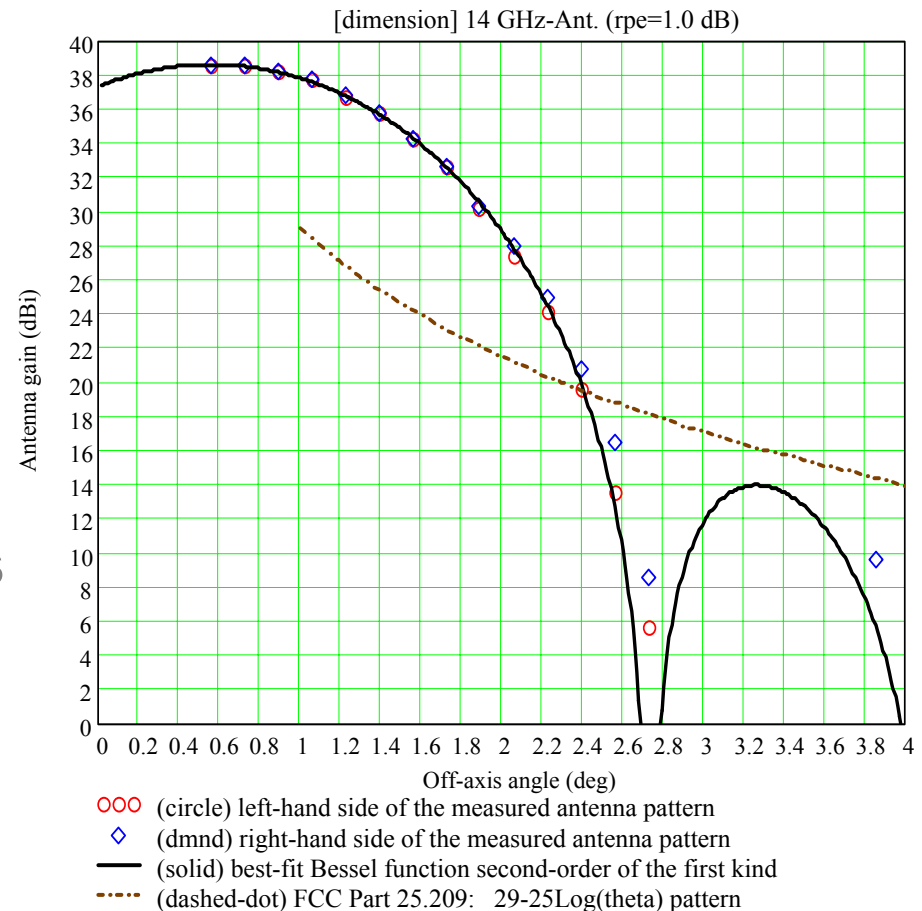
- This figure shows the transmit pattern under the effect of 0.5 dB downlink pointing error (0.4° error)
- At 0.5 dB downlink pointing error (0.4° error), the antenna exceeds the “29-25log θ ” envelope by **over 2 dB**



Effect of 1.0 dB (0.56°) Error

MOVING AHEAD

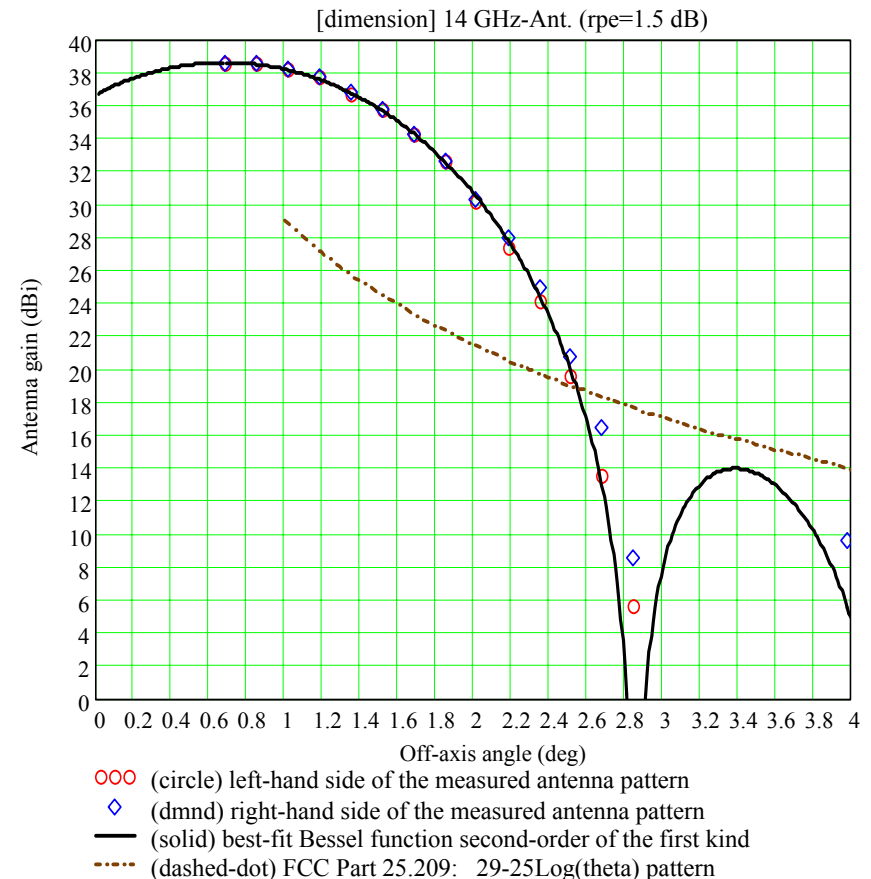
- This figure shows the transmit pattern under the effect of 1.0 dB downlink pointing error (0.56° error)
- At 1.0 dB downlink pointing error (0.56° error), the antenna barely exceeds the “29-25log θ ” envelope by **over 6 dB**



Effect of 1.5 dB (0.68°) Error

MOVING AHEAD

- This figure shows the transmit pattern under the effect of 1.5 dB downlink pointing error (0.68° error)
- At 1.5 dB downlink pointing error (0.68° error), the antenna barely exceeds the “29-25log θ ” envelope by over 8 dB



- Earth station antennas such as those considered here should not be licensed without assurance that adjacent satellite networks will be properly protected
- Accordingly, PanAmSat has supported the SIA proposal that earth station antennas with a transmit pattern that intersects the “29-25log θ ” envelope at an angle α such that $1.5^\circ < \alpha \leq 1.8^\circ$ require special care
 - Applicants should be required to provide either a technical showing demonstrating that required pointing accuracy will be met or evidence of a coordination agreement with adjacent operators
- The interference event described here highlights the importance of such a requirement